

WHAT IS CLAIMED IS:

1. An endovascular stent/graft assembly comprising a tubular graft having first and second axial ends and a passage extending between the ends, the assembly further comprising a fixation device having first and second axial ends and a passage extending between the ends, said first end of the tubular graft being connected substantially in end-to-end relationship with said second end of the fixation device.

2. The endovascular stent/graft assembly of claim 1, wherein the substantially end-to-end disposition of the tubular graft and the fixation device comprises a sufficient overlap between the ends of the tubular graft and, the fixation device to achieve secure affixation between the fixation device and the tubular graft.

3. The endovascular stent/graft assembly of claim 1, wherein the first end of the tubular graft and the second end of the fixation device are affixed by bonding.

4. The endovascular stent/graft assembly of claim 1, wherein the first end of the tubular graft and the second end of the fixation device are affixed by sutures.

5. The endovascular stent/graft assembly of claim 1, further comprising at least one wire extending from the fixation device substantially through the tubular graft and having an end affixed in proximity to the second end of the tubular graft.

6. The endovascular stent/graft assembly of claim 5, wherein the at least one wire consist of a single wire.

7. The endovascular stent/graft assembly of claim 6, wherein the assembly comprises a longitudinal axis, and wherein the wire is aligned substantially parallel to the axis.

8. The endovascular stent/graft assembly of claim 6, wherein the wire is a coil for providing radial support to the tubular graft.

9. The endovascular stent/graft assembly of claim 5, wherein the at least one wire comprises a plurality of wires.

10. The endovascular stent/graft assembly of claim 1, wherein the fixation device is a first fixation device, and wherein the assembly further comprises a second fixation device connected in substantially end-to-end relationship with the second end of the tubular graft.

11. The endovascular stent/graft assembly of claim 1, wherein the fixation device is a tubular stent.

12. The endovascular stent/graft assembly of claim 1, wherein the fixation device comprises a plurality of hooks substantially at the first end of the tubular graft.

13. The endovascular stent/graft assembly of claim 1, wherein the fixation device has cross-sectional dimensions different from cross-sectional dimensions of the tubular graft.

14. The endovascular stent/graft assembly of claim 1, wherein the fixation device and the tubular graft define a common central longitudinal axis, the longitudinal axis defining a curve for substantially conforming to a non-linear configuration for a blood vessel.

15. The endovascular stent/graft assembly of claim 1, wherein the second end of the tubular graft is bifurcated to define first and second tubular graft exits for disposition respectively in first and second blood vessels.

16. The endovascular stent/graft assembly of claim 1, wherein the tubular graft comprises a plurality of tubular branches extending transversely from locations between the first and second ends.

17. The endovascular stent/graft assembly of claim 1, further comprising an internal stent deployed into the tubular graft after positioning of the fixation device and the tubular graft.

18. The endovascular stent/graft assembly of claim 1, wherein the fixation device is a first fixation device and the tubular graft is a first tubular graft, and wherein the assembly further comprises a second fixation device with opposite first and second ends and a second tubular graft having opposite first and second ends, at least part of one of the second fixation device and the second tubular graft passing substantially coaxially through the first fixation device.

19. The endovascular stent/graft assembly of claim 1, wherein the fixation device is an outer fixation device and wherein the tubular graft is an outer tubular graft, the outer tubular graft being expandable sufficiently for occluding blood vessels leading into an aneurysm, the outer fixation device and the outer tubular graft defining an outer subassembly, the assembly further comprising an inner subassembly having an inner fixation device with opposite first and second ends and disposed within the outer subassembly, the inner subassembly further comprising an inner tubular graft having opposite first and second ends, the first end of the inner tubular graft being connected substantially in end-to-end relationship with the second end of the inner fixation device and extending through the outer tubular graft.

20. The endovascular stent/graft assembly of claim 19, wherein the outer tubular graft comprises a detachable balloon.

21. The endovascular stent/graft assembly of claim 19 further comprising a detachable balloon between the inner and outer tubular grafts.

22. The endovascular stent/graft assembly of claim 19, further comprising at least one internal stent disposed in at least one of the inner and outer tubular grafts.

23. The endovascular stent/graft assembly of claim 1, wherein the tubular graft is a detachable balloon.

24. The endovascular stent/graft assembly of claim 1, wherein the fixation device is a first tubular stent, and wherein the tubular graft is a first tubular graft, the assembly further comprising a second tubular stent disposed within the first tubular graft at a location between the upstream and downstream ends of the first tubular graft, the second tubular stent having opposite upstream and downstream ends, the first tubular graft further comprising an exit extending from the first tubular graft at a location between the downstream end of the second tubular stent and the downstream end of the first tubular graft, the assembly further comprising a second tubular graft having an upstream end connected in substantially end-to-end relationship with the downstream end of the second tubular stent and a downstream end, portions of the second tubular graft between the upstream and downstream ends thereof passing through the exit of the first tubular graft, the upstream end of the second tubular graft being configured to permit blood flow from the upstream end of the first tubular graft to the downstream ends of both the first and second tubular grafts.

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